

SWEN90016: Software Processes and Management

Group Project: Semester 1, 2017 myFarmXchange Case Study

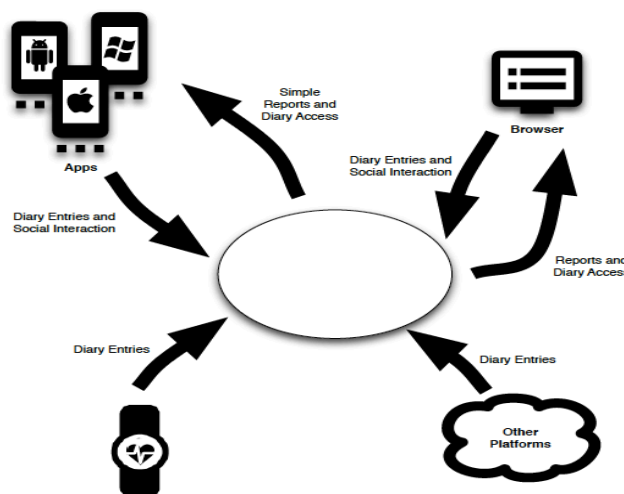
Wilma Flint and Barnaby Rubble are the founder of myFarmXchange, a small start-up company with a \$50,000 grant from the Australian government sponsored Rural Infrastructure Fund. Wilma and Barnaby are wheat farmers and technology enthusiasts, keen to tap in to the rural community spirit and the use of mobile devices like tablets, phones and smart watches and social media.

Their mission is to enable farmers to form unified trading blocs, to improve both the farmer's economic prosperity selling grain and the farmer's community connections. Their vision for the company is for a social media platform which unifies farmers during business transactions into a significantly big group of sellers, with a strong influence over negotiations of the price farmers receive for their crop from the large Bulk Grain Handlers agribusinesses, like GrainCorp.

Successful users of the platform will need the skill and information to intelligently monitor the national grain price fluctuations and analyse the market, so they can participate competitively in the grain marketplace.

While Wilma and Barnaby are both avid users of technology, neither of them has a background in IT development. They're looking to you to help develop the technology platform that will be the foundation for their business.

The central idea of the platform is for people to be able to ⁽¹⁾ record farm indicators in a 'diary'. Each entry could be for a grain type, quantity and quality of crop harvested, a preparation activity (eg. fencing, fertilizing, weeding, irrigation) or recording an indirect measurement such as crop growth indicators, soil moisture levels or pests detected. Over time, users will be able to see how their farm has performed and track improvements. While there are similar platforms currently available, Wilma and Barnaby see their key differentiator from their competitors as the social media aspect of their vision. ⁽²⁾ Users should be able to 'connect' with each other – friends or other people around the district who might have the same interests in the same crops. Similar to Facebook, Wilma and Barnaby would like people to be able to 'like' (or as they say 'congrats!') diary entries that their connected ⁽³⁾ friends post, as well as write comments. Wilma and Barnaby have drawn a diagram of what they think their platform will look like from a technology perspective:



There are several key aspects to the platform that Wilma and Barnaby have already thought about:

User Profiles

Each user of the platform will need to register as either an active member or an observer. This will allow them to **access the platform from the various devices, apps, browsers and other online services** (4) that the user may use. The profile can be minimal, but an active user must provide their official National Growers Registration (NGR) number. Only active users can create entries. All users have options to provide a range of farm and demographic information such as age, gender, location, crop, farm size and specify some productivity goals. They can also add a profile picture.

Diary Entries

The core of the myFarmXchange platform is the idea of a diary. For most users, the most common entry added to their diary will be some kind of farm activity. This might be a harvesting task, receiving an official grain quality ranking, a selling task, a storage task, a maintenance task or an equipment upgrade. The platform needs to support a wide range of farm activities. Each type of activity may have several different data items recorded.

All will include a date, start time and duration. All will include an estimate of the cost of that activity based on the activity type and duration, given the average values for farmers in that location and market.

Some, like harvesting, will include the crop type, quantity and quality. This may optionally include map data of the farm paddock in a standard GPS file format (.tcx or .gpx).

Users can make other entries for concrete farm measurements. For example, equipment upgrade tasks, fencing, fertilizing, weeding, irrigation. These items need fewer data items – consider just using a cost estimate, date and unit of measure.

Users can also add entries for indirect measures – this would include the date, type of measure (growth rate, soil, pests etc.) and cost estimation. These entries are hoped to foster productivity innovations.

Finally, users can also add text-based diary entries and attach photos or videos. This could also have a comment on how they're doing against their goals, or some other piece of information they'd like to share with their friends.

Wilma and Barnaby see the diary entries a bit like posts on other social media sites like Facebook. Users should be able to comment on each other's entries, a bit like this:



Wilma and Barnaby envisage the following means of adding diary entries to the platform:

Manual Entry

Using a web browser or one of the apps that will be developed, users can manually add an entry to their diary. They should also be able to edit or delete any entries they've made. Wilma and Barnaby are curious about what the smart watches can do.

Syncing with Mobile Devices (5)

Various monitoring devices are available on the market that track different activities or measurements. These include devices like wireless weather stations and fitness tracking wrist bands that track the number of steps a person takes a day. Other devices, like soil test kits, simply take measurements.

Most of these devices allow users to upload device data to the Internet and they would like to sync the platform to accept data from this uploaded source. The platform should then automatically create diary entries for activities or measurements captured by the devices.

Not all data that a device generates needs to be accepted, just the data that the myFarmXchange platform supports.

Syncing with other Farm Services (6)

Many users will already have accounts on other farm platforms such as GrainCorp, (for selling grain online), or subscription based applications like ProFarmer, (for comparing the daily variations in the buying price) or Australian Crop Forecaster, (for harvest predictions based on weather conditions). Some of these platforms allow users to export their data for syncing with other platforms. Similar to syncing directly with monitoring devices, these other platforms may provide more data than is actually needed on the myFarmXchange platform, so only the data that myFarmXchange supports needs to be imported.

Users should be able to set up a link from their profile to the services (and associated account information) they want to sync, and the importing of activities to their diary should happen automatically.

Social Interaction

Connecting with friends

As with other social media platforms, myFarmXchange users should be able to search for and connect with other users. For security reasons, connection requests need to be approved by the user who receives the request.

Connected users will see each other's diary entries in their 'feed', allowing them to comment on those entries and/or give 'Congrats!'. Users can also delete connections and report anti-social behaviour. All users must agree to a Code of Conduct and offending users can be removed from the platform by the platform administrator.

Events (7)

Users can create events that they can invite their connections to attend. An event might be a group sell of the district's combined grain harvest, or some other kind of meetup. Events have a date, time and location. Users can be invited by the event creator, and invited users can accept, decline or say 'maybe'. Events can be commented on by all invited users.

Future Enhancements

Wilma and Barnaby are hoping the social aspects of the platform appeal to end users and the platform will build up loyalty with a significant proportion of Australian farmers. When the platform does have a presence in the market then there may be an opportunity to earn revenue from it. They would like to offer an "eBay style" transaction processing facility in the future. They would like the platform to support registered user groups selling grain to the Bulk Grain Handlers for a small handling fee.

Client Contact

Wilma and Barnaby are available to answer more questions you may have about their requirements for the platform on the Assignment discussion forum on LMS.